Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

GEOGRAPHICAL RECORD

NORTH AMERICA

The Caribou Migration on the Yukon Plateau in the Autumn of 1915. Caribou are probably the most migratory of the deer family. While not so swift afoot as the moose or elk they make annual excursions from the Arctic feeding grounds south to the more congenial timber areas of the southern Yukon Territory and Alaska. Caribou have been seen as far south as Lynn Canal, a journey of a thousand miles or more from their summer home. In the Yukon Territory little is known of the caribou's summer or winter feeding grounds. They thrive in uninhabited regions where they subsist on moss, lichens, etc., on which horses and cattle would starve. Figures 1 and 2 represent the animals on the march in November, 1915, about 25 miles west of the

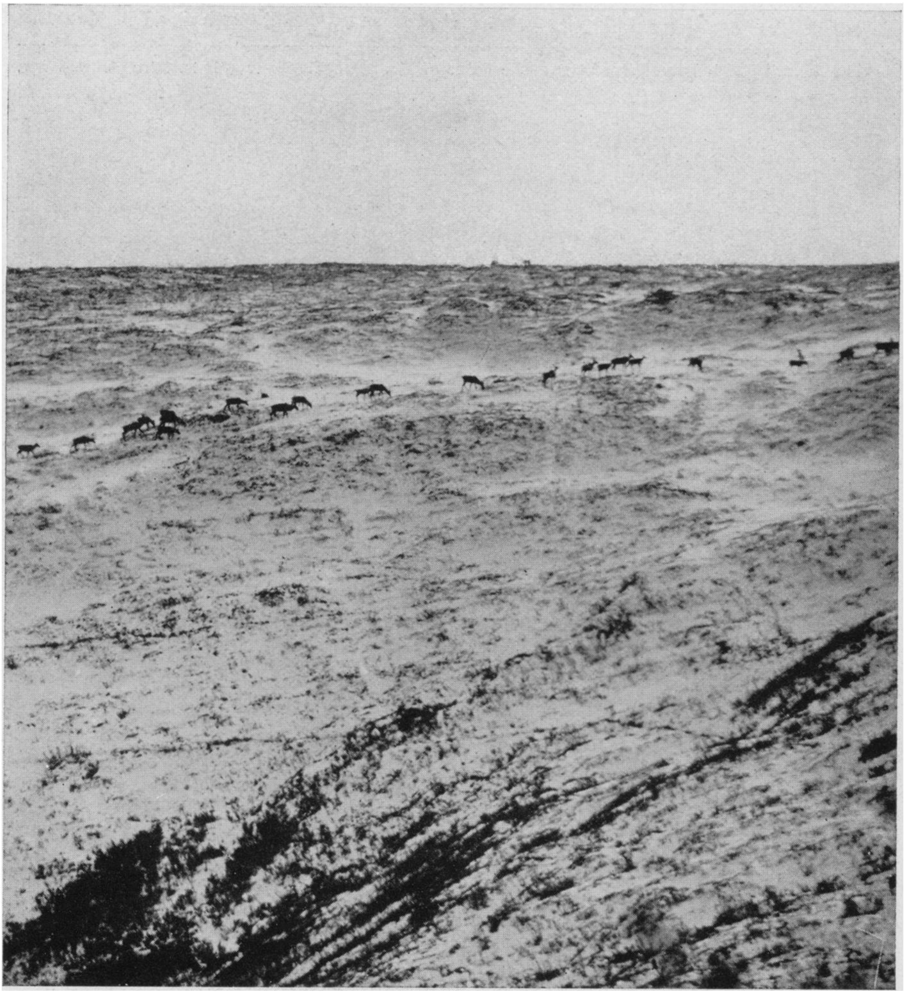

FIG. 1—Caribou migrating southward across the Yukon Plateau near Dawson in November, 1915. (Photo by J. Doody, Dawson, Y. T.)

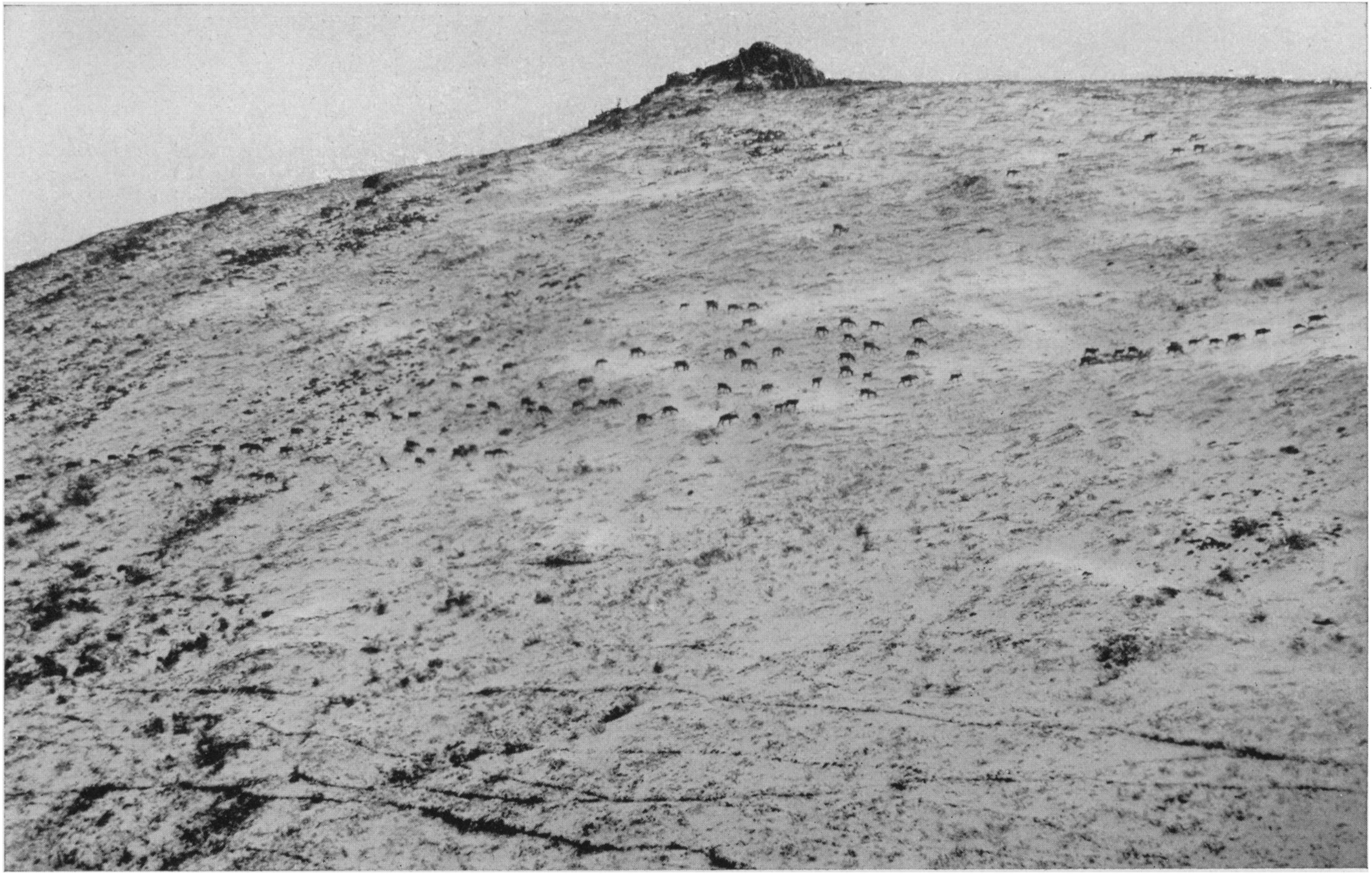

Fig. 2—Caribou feeding as they migrate southward, Yukon Plateau near Dawson, November, 1915. (Photo by J. Doody, Dawson, Y. T)

Yukon River, opposite Dawson. It is estimated that between 8,000 and 10,000 caribou went south by this route, which is not always the one they follow. There was no wanton slaughter of these beautiful animals by the whites or Indians. Each hunter was allowed three carcasses (all under police supervision); and probably 600 were taken for Dawson's winter food-supply. These included both the barren-land caribou (*Rangifer Groenlandicus*) and the woodland caribou (*R. Caribou*). The *Rangifer Caribou* is somewhat longer than the barren-land caribou. For the most part the caribou travel single file in winter and do not, as a rule, disband until they reach permanent feeding grounds. J. H. Brownlee.

Break-up of the Yukon River Ice at Dawson. A Dawson resident and Corresponding Member of this Society, Mr. J. H. Brownlee, writes, under date of May 17, a number of interesting items relating to this year's ice movement on the Yukon.

"As the ice 'went out' this year within six hours of the earliest date in twenty-one recorded years, the event has considerable interest for Alaska and Yukon river men and the travelers who wait each year for the waterway to open. The average date of the Yukon break-up at Dawson is between May 10 and May 12. The event is timed by the aid of a wire cable fastened to a prominent pedestal set on the ice midway between shores. The wire is attached to an electric stop-clock ashore set to standard time (9h.) which is used here instead of longitude time (9h. 17m.). The clock stopped at 10h. 3m. A. M. on May 3d and the ice moved downstream the length of a city block and jammed, the water rising behind it and overflowing part of the beach in front of the town."

When the ice breaks a crowd collects, bets are paid, and plans completed for the season's river work which the ice movement heralds. The mouth of the Yukon is free shortly after the middle of June, when up-river steamboat navigation begins. Though the ice causes some destruction it also produces a few beneficial effects. Wooded banks are undermined and the trees swept downstream as drift-wood—an annual contribution of real importance to the desolate shores of the Arctic. The break-up has been the subject of a number of interesting descriptions. Among these are "The Geography and Resources of the Yukon Basin," by William Ogilvie (*Geogr. Journ.*, Vol. 12, 1898, p. 38) and the "Breaking Up of the Yukon," by Captain G. S. Gibbs, U. S. A. (*Natl. Geogr. Mag.*, Vol. 17, 1906, pp. 268-272).

Changes in Indian Life, British Columbia. The plateau Indians of the northern interior of British Columbia, like other members of the Athapascan stock more dependent on vegetable food than the coast tribes, have nevertheless been primarily hunters and fishers. Now a change appears to be in progress. This is noted in the *Report of the Survey Branch of the Department of Public Lands, British Columbia, 1915* (Victoria, B C., 1916) among the Takulli, or Carrier, Indians occupying the Fraser Lake country now tapped by the Grand Trunk Pacific Railway. In common with other tribes these people have entertained an extraordinary delight in horses. They would buy or steal as many as possible, and even the poorest Indian would have at least a single horse. With such a means of improving the "call of the wild" the Indian has naturally paid scant attention to the government agents' attempt to introduce cattle-raising and agriculture, especially as fish has been the chief food resource of this "people-who-go-upon-the-water" (see, under Takulli, "Handbook of Indians of Canada," Ottawa, 1913, reprinted from "Handbook of American Indians North of Mexico," *Bureau of Amer. Ethnol. Bull. 30*). Recent failures in the salmon catch seem to have had an influence in turning the Indian to more settled occupations. Within the last year one Indian reserve has raised 230 acres of oats in addition to garden produce, and another reports the possession of over fifty head of cattle.

This Spring's Catch of the Newfoundland Sealing Fleet. From a St. John's correspondent, Mr. Herbert Knight, we are informed of the phenomenal good fortune of the sealing fleet of Newfoundland. The boats left for the ice fields early in April, and in less than three weeks all that had gone out to the eastern fields were back in port with bumper cargoes. In this short time the crews of the ships made, some as much as $150 per man and none less than $98. The skipper of the largest vessel in the fleet made in the same period over $5,000. These figures are supplemented by a recent *U. S. Commerce Report* (No. 119, May 20, 1916). Only eleven ships, with 2,028 men, were engaged. The catch amounted to 241,302 seals, which, according to the current high prices, are valued at $639,657. From this may be judged the value of the industry to the people of Newfoundland. The fleet which went to the Gulf of St. Lawrence did not return so soon nor did it do so well; but exceptional results are not to be expected in this case because only the weaker vessels frequent that region.

Among the most successful of the ships was the *Terra Nova,* which bore Scott to the Antarctic on his last voyage. Quite a number of Newfoundland sealing vessels have been distinguished in polar exploration. Two years ago the *Southern Cross,* which bore the Borchgrevingk expedition to the Antarctic, foundered while returning home with a load of seals, with the loss of many men.

According to the *U. S. Commerce Reports, Supplement No. 33a,* Dec. 28, 1915, in the Newfoundland seal fishery of 1915 there were engaged twenty steam vessels and 3,959 men. The season began March 15 and closed April 20; and the total catch was 272,965 seals, weighing 5,532 gross tons, and valued at $494,355.

Weather and Crops in the United States. In a paper read before the Pan-American Scientific Congress in December, 1915 (abstract in *Monthly Weather Rev.,* Vol. 44, 1916, pp. 74-75), Professor J. Warren Smith emphasizes certain critical relations which he has discovered in his study of weather and the yield of corn, potatoes, and winter wheat. In the case of corn the most important weather factor is rainfall, and the most important month is July. For potatoes the most important factor is temperature, and the critical month is also July. March is the critical month for winter wheat, and temperature is the most important weather factor. In July the critical rainfall value for corn is 3 inches. A variation of 0.25 inch in the July rainfall in Ohio makes a difference of nearly $3,000,000 in the value of the yield of corn, while a variation of 0.50 inch makes a variation in the yield of over 15,000,000 bushels. In the four greatest corn states of the central United States a variation of 0.50 inch of rainfall at this critical period makes a variation in the value of the amount of corn raised of $5 an acre, or a total of $150,000,000. July must be wet and moderately warm for corn but should be cool and moderately wet for potatoes. If July averages more than 1° a day warmer than the normal, the probability of the potato crop being above the average is only 12 per cent. The correlation between weather conditions and the winter wheat crop is much more difficult to determine. A rather surprising fact, in view of the popular belief to the contrary, is the discovery that in Ohio there seems to be no beneficial result upon the winter wheat crop from a snow cover and no damage from the lack of such a cover. At any rate, the snow cover has no dominating influence. On the contrary it appears that bare ground with freezing and thawing weather in January is beneficial. Snowfall in March is decidedly detrimental to winter wheat.

R. DeC. Ward.

The Melting of Snow in the High Sierras. While much attention has been given to the depth and the distribution of snowfall, comparatively little study has been made of the conditions which determine the disappearance of snow. Prof. A. J. Henry of the U. S. Weather Bureau has recently investigated the weather conditions which may modify or control the disappearance of the snows in the High Sierras of California (*Monthly Weather Rev.,* March, 1916). The most pronounced ''snow flood'' in the United States is that which passes annually down the Columbia River and which is due almost wholly to the melting snows on the mountains of the Columbia drainage basin. Otherwise ''snow floods'' are generally rare in the United States, flood conditions being usually brought about by a combination of snow-melting and of heavy rainfall. Professor Henry concludes that, in the High Sierras, the most favorable weather conditions for the conservation of the snow cover are low temperatures and little wind movement. When these conditions prevail, the average loss by evaporation is about three-quarters of an inch per day. Relatively high temperature, active wind movement, and abundance of strong sunshine are the most favorable conditions for the conservation of a snow cover. Under these conditions, the loss of freshly fallen snow may average ten inches a day, and of old snow, three to four inches. R. DeC. Ward.

Geodetic Connection between Mexico and the United States. The U. S. Coast and Geodetic Survey announced the completion in May of the work at the Rio Grande west of Brownsville, Texas, and Matamoros, Mexico, which connects the triangulation systems of the United States and of Mexico. In the United States the arc of primary triangulation extends from the northwestern part of Minnesota southward along the 98th meridian to the Rio Grande, and Mexico had extended an arc of primary triangulation along the 98th meridian from its Pacific coast to the Rio Grande. Mr. E. H. Pagenhart, of the Coast and Geodetic Survey, and Mr. Silverio Alemân, of the Mexican Geodetic Commission, in April and May made the observations from towers erected on both sides of the river, and the work was successfully completed. The length of the completed arc is 2,270 miles. This is a notable event in the history of geodesy and will make it possible to have the maps of the two countries harmonize at the border.

SOUTH AMERICA

The Mineral Resources of Argentina. The extent of Argentina's mineral resources is imperfectly known, and exploitation is only beginning. In 1913 minerals constituted less than one-half of one per cent of the total Argentine exports. The only items of any significance were copper, in ore and bar, wolfram ore, and borates. Statistics of production are not available, but the home consumption was assuredly very small except in the case of Argentina's newest and most valuable mineral product, petroleum. The much-discussed Comodoro Rivadavia oil-fields were discovered in 1907 while boring for water. Up to July, 1915, government-reserve and private wells had produced approximately 27,000,000 gallons (Fernanda de Pedroso: Informe sobre el estado de la exploración y explotación de los yacimientos petrolíferos del Distrito Minero de Comodoro Rivadavia, *Direcc. Gen. de Minas, Geol., e Hidrol., Serie A (Minas), Bol. No. 6,* Buenos Aires, 1915). Yet, according to the *South American Journal* (Vol. 79, No. 20, London, 1915), the present exploitation, inadequate for lack of funds, is little more than sufficient to pay the costs of working, although the shortage of coal offers every inducement for the production of new sources of fuel. Apropos of this scarcity, the same periodical (Vol. 80, No. 18, 1916) states that investigations made in Neuquen have resulted in the discovery of a good quality bituminous coal, but its location, 1,100 miles from Buenos Aires and 300 miles from railhead, renders its development uncertain. Use of *quebracho* wood, exploitation of the peat and lignite beds of Tierra del Fuego and the Uruguayan peat deposits in the vicinity of Montevideo, importation of South African coal, inferior though it is, are other relief measures suggested or in the course of trial (*The South American,* Vol. 4, No. 7, New York, 1916).

Argentina's great and almost untouched mineral resources lie in the Andean provinces. Most of the problems connected with their extraction are expressed in a recent official report relating to a department of the province of Catamarca (Juan F. Barnabê: Informe sobre el Distrito Minero de Tinogasta, *Anal. del Minist. de Agric.: Sección Geol., Mineral., y Minería,* Vol. 10, No. 4, Buenos Aires, 1915). The department of Tinogasta embraces the eastern slopes of the main cordillera of the Andes and a series of the characteristic longitudinal valleys that lie between the buttress ranges trending southward from the Puna de Atacama. Its mineral deposits do not compare favorably with those of the adjacent Chilean province of Copiapó. The reason is physiographic. The vast andesite flows that played so important a part in the ore genesis originally covered a vast area on both flanks of the Cordillera. They are largely denuded from the wetter Chilean slopes; on the Argentine side they remain comparatively unbroken and sterile save for the occasional *salars* of salt and borate. The Tinogasta ore deposits—tin, copper, wolfram, and silver—are practically limited to the great massif of San Francisco and to the eastern sierras of Zapata and Fiambalá. Copper is not a mineral that can be profitably exploited under the pioneer conditions that now obtain in the department. The mineral localities are five or six days from the nearest railroad station, and labor is both scarce and expensive. Gold, silver, even tin, bring immediate returns and involve the initial outlay of much less capital. The richer Chilean fields are more attractive than the remote Argentine region. It is clear that nothing can be done until the projected Andean railroad is brought into the Tinogasta valley and communication established with Rosario. Though the local deposits are valueless save for the distillation of volatile products, other sources of power are close at hand for smelters established in the field. There are considerable woods of the tough, durable, resinous *algarrobo,* useful alike for fuel and mine timber. Some of the trees in these forests are said to attain a thickness of three feet or more. Water power naturally exists in abundance, and some benefit might be extracted from the great curse of the region—the wind.

The climate of the sierras is particularly objectionable; violently stormy in summer, in winter it renders life wretched by the cold and the constant wind, the *zonda,* blowing from the north and excessively dry. According to Hann it is a wind of the föhn type. Worst of all for the miner is the inevitable *puna* or *soroche,* the mountain sickness caused by the altitude and the extraordinary dryness of the air. The latter factor makes the *puna* a source of annoyance even in Fiambalá, at an elevation of little more than 5,000 feet. The main height of the mountainous region is not under 11,500 feet and rises to great elevations. One unnamed peak in the San Francisco massif, 22,573 feet, is reputed to be second only to Aconcagua.

Navigability of the Chilean Fiord Channels as Compared with the Outside Route. The interior route by way of the fiords of southern Chile from the Pacific end of the Straits of Magellan to the Gulf of Peñas in 47° S. has the advantage of providing a smooth-water channel about 300 nautical miles in length. The outside run, in comparison, is characterized by heavy weather and is used only by full-powered mail steamers, to whose masters time is an all-important factor. According to *Reprint of Hydrographic Information No. 25,* published April 29, 1916, by the U. S. Hydrographic Office, the inner route, which is designated the ''Patagonian Channels route,'' is used by small and medium-sized vessels which are not inconvenienced by the delays of nightly anchorage.

The channels are generally narrow and tortuous and dwindle occasionally, as in English Narrows, the constricted part, in 47° S., of the channel separating Wellington Island from the mainland, to only about 200 yards. The shores generally present abrupt faces. The most dangerous section is English Narrows, both on account of shoals and S turns. Navigators as a rule await slack water at Eden Harbor when proceeding from the south, or at Gray or Halt Harbor when sailing in the opposite direction. Through the whole extent of the channels it is possible to find anchorages every few miles for moderately sized vessels, the longest run between any two being 27 miles.

The prevailing winds blow from north-northwest to south-southwest and are generally squally. Rain or wind is not unusual in the northern portion, while snow and hailstorms prevail at the southern end. The wind force varies between 2 and 6 of the Beaufort scale and occasionally attains 8. The steep walls of the channels maintain the wind-flow in the direction of the gap. According to information reported by naval officers it is possible to take a division of the largest American battleships from Punta Arenas to the Gulf of Peñas through this interior road. It is also of importance for vessels proceeding from nitrate ports in Chile to American Atlantic and Gulf ports.

EUROPE

Land Versus Sea in the War. The geographical aspects of the conflict of Germany's land might with England's sea power is the subject of comment in the weekly edition of the *Berliner Tageblatt* for December 29, 1915. From the shores of the Baltic Sea to the shallow coast of the Persian Gulf the main land thoroughfare and its adjacent territory is in Teutonic hands. Five nations in control of the successive railway sections which provide this central area with the means of transportation are allied to one another. But the northern and southern terminals of this international line are controlled by the guns of another group of nations. France and England are watching the German coasts off the Atlantic as well as the entrance to the Baltic. Italian and Allied men-of-war patrol the entrance of the Adriatic and eastern Mediterranean waters. Cyprus, whose formal entry into the British fold dates from November 5, 1914, mounts guard before the bay of Alexandretta. From Suez southward around the Arabian coast to the Persian Gulf and Indian waters the remainder of the sea ring extends uninterruptedly.

In this conflict between land and sea, transportation problems play an important part. Both sides are well provided. The sea is open to the traffic of the Allies and neutral nations. On land an admirable system of strategic railroads afford communication between bases and field. At Gallipoli and Suez sea power, being under control of land batteries, is in a condition of inferiority. In the same way the gap in the Turkish end of the intercontinental railway line is a source of weakness to the Central Powers.

In this connection it may be worth while mentioning that the greatest conquests in history have been achieved by nations or leaders who ruled over both land and sea. A strong army is of no permanent value without a powerful fleet in the race for world empire. Neither would the mightiest battleship fleet in existence be of any avail for the same purpose without an efficient land force. Where the two occurred together in ancient times, however, the entire known world felt their control. So in our day history will be profoundly influenced by any nation which combines both sea and land power.

This contest between land and sea receives attention from H. G. Dwight, writing in the *Yale Review* for April, 1916, under the title of ''The Campaign in Western Asia.'' Although this caption is singularly ill-chosen, as hardly a word concerning this campaign is mentioned, the article is an enlightening contribution to Persian and Turkish political problems of the day. The writer reviews in brief the historical events which have led to the present military activity in Western Asia. The two Mohammedan nations realize that a thorough invasion of their eastern territory is made by the spirit of Western progress. Russia's expansion toward the south and British occupation of Egypt and India have thrown Turkey into the lap of Germany. The advance of Russian troops alone prevented Persia from following suit.

To Vasco da Gama's memorable journey in 1498 is attributed the beginning of this struggle between land and water. It is the tale of over four centuries of sustained effort on the part of Europe to control Eastern markets. Rivalry between merchant adventurers of different nations has been conspicuous. The Portuguese first-comers are gradually ousted by the British. French leaders try in vain to succeed to English predominance. Russia alone seems able to widen her sphere of influence in telling fashion, perhaps because of her own half-Asiatic character. In recent years the spectacle of Germany currying Mohammedan favor with considerable success has been apparent.

The competition for railroad concessions in Turkey is touched upon lightly. In spite of Germany's present power in Turkey, relatively little progress in railroad-building has been accomplished. The important Bagdad line has been extended to a point which is dangerously near the path of the Russian army having Bagdad as its objective, and new developments of the Palestine lines are unknown. The latest progress in the west Asian field is the completion of the Julfa-Tabriz line in Persia, the first link of a Russian system of railroads in the country.

Turkey's weak hold over the coast of the Persian Gulf is explained. The Turkish annexation of Bagdad in 1638 was, comparatively speaking, a recent event and the result of victory in the field over the Persians. What might appropriately have been added here is that Turkish sovereignty was never exercised with any degree of authority in the city and its dependent districts until telegraphic communication had been established with the capital some sixty years ago. Even since then the Sultan's representatives have ruled only by taking advantage of internecine Arab feuds. Persian claims to the region, steadily put forward by the shah's representatives, were only disposed of in October, 1914, when the present Turco-Persian frontier was defined by a mixed commission, in which English and Russian representatives participated.

Protecting an Irish Railway from the Wind. The West Clare Railway of Ireland, one of the so-called ''Irish light railways'' (narrow-gage), runs from Ennis to Kilkee. For 36 miles it follows the Atlantic seaboard, exposed to the full fury of the westerly gales. Derailment of trains in heavy gales has occurred several times. Shelter banks, thrown up on the windward side of the railway, were ineffective and expensive. Finally the Meteorological Office was consulted by the chief engineer of the railroad, and a pressure tube anemometer was installed to give warning of winds of dangerous velocity by ringing a bell in the station-master's house. Two warnings are given, the first when the instrument indicates 65 miles an hour and the second when the velocity rises to 85 miles an hour. When the first warning has been given, 24 hundredweight of movable ballast, kept for the purpose at every station, are put on each car of the train, this being amply sufficient to prevent an overturn. If the second warning comes, the trains are stopped until the storm abates. The anemometer was installed in December, 1909, and has never failed to give the proper warning. One storm-derailment has since taken place, but that was due to deliberate disregard of the instructions (*Symons' Meteorol. Mag.*, March, 1916). R. DeC. Ward.

Mountain Scenery as Viewed by the Greeks and Romans. The attitude of mind in classic times toward mountain scenery forms the subject of an entertaining contribution to the *Classical Journal* (Vol. 11, 1915-16, No. 2, pp. 70-84) by Prof. Walter Woodburn Hyde of the University of Pennsylvania, author of the article on Etna in the June *Review*. The scant notices of scenery in ancient literature tend to prove that early writers were little attracted by the charm of inanimate nature. Life and the world, to them, was centered wholly in their fellowmen, and it was with difficulty that they detached themselves from this idea. So, from Homer down to the Christian period of the Roman Empire, appreciation of the beauty of mountain scenery has never been raised to the pitch of modern admiration.

A deep feeling of sympathy existed, however, for the simpler beauty of pastoral, rural, or sylvan scenes, both among Greeks and Romans. The grandeur and majesty of mountains, if attractive at all, occupied only a subordinate niche in the classical mind, because the harmony which pervaded the tamer scenes was not as fully developed in them. The wildness and ruggedness of nature meant then as little to the civilized or intellectual Mediterranean dweller as it does today to the inhabitant of a district favored by the delights of gentle landscapes.

The explanation for this condition must be sought for in the domain of geography. The Greek and Latin peoples of the Mediterranean basin were pre-eminently seafarers. As sailors, they always regarded the mountain with feelings of aversion and awe. The Greeks, especially, never rose far above sea-level in their search for beauty of scenery. Being dwellers of coast lands, the picturesque in their minds naturally associated itself with the blue sea. Their narrow valley homes assumed width and beauty only as they neared the sea-shore. Furthermore, in Greek mountain scenery, no single peak ever attains a great altitude, and while respectable elevations are conspicuous in the Greek landscape, the observer never gazes on majestic outlines of the Alpine type. If, bearing the geography of the country in mind, we also remember that the Romans were, after all, but intellectual sons of Hellas, it is easy to understand how Greek viewpoints held sway in the sister peninsula.

A French Example of the Clannish Spirit Fostered by Mountain Environment. In January, 1914, was ratified the treaty of peace concluding a feud whose origin dates back to 1591 (Un procès de trois siècles, *La Montagne*, No. 10-12, French Alpine Club, Paris, 1915). The pertinaceous belligerents were the communes of Nantes-en-Rattier and La Valette, occupying mountain valleys in the department of Isère. For three centuries they had fought over the possession of communal woods on the mountain known as "Les Passuers et les Taillis." At last they have been reconciled; the mountain has been divided. La Valette will pay an indemnity of 4,000 francs and receive certain surrenders in exchange.

POLAR REGIONS

The Relief of the Crocker Land Expedition. It will be recalled by the readers of the *Review* (see February number, p. 145) that the Crocker Land Expedition sent out in the spring of 1913, under the joint auspices of the American Museum of Natural History, the American Geographical Society, and the University of Illinois, was to have been relieved by Doctor Hovey in 1915. On account of unusually severe ice conditions and a disabled engine the relief ship *George B. Cluett* could not proceed farther than North Star Bay, which was reached in September. From here Doctor Hovey proceeded in a motor launch, placed at his disposal by Knud Rasmussen, the Danish explorer, to Etah and brought back to North Star Bay Messrs. Tanquary, Green, Allen, and Ekblaw of the main expedition. Messrs. MacMillan, Small, and Hunt were absent from headquarters, seeking food. Doctor Hovey did not return from Etah in time for the *George B. Cluett* to get out, and she was forced to winter in Parker Snow Bay. Provisions ran short, and in January, 1916, Doctor Hovey and Captain Comer of the relief expedition were forced to leave the ship and look for food, and the party separated. Doctor Hovey, accompanied by Messrs. Tanquary, Allen, and Green, began a sledge journey across Melville Bay, with the object of reaching southern Danish settlements. Owing to his physical condition, Doctor Hovey could not proceed farther than Cape York and returned to North Star Bay. A few days later Messrs. Tanquary, Allen, and Green again set out with sledges and finally reached Egedesminde in southern Greenland. Mr. Tanquary then went on alone to Holstenborg and from there sailed for Copenhagen on the steamer *Hans Egede*, arriving on May 23. Thus both the main party and the relief party are now in need of assistance, and the Crocker Land Committee is sending the steamer *Danmark*, which is now in south Greenland, to the relief of the expedition. The *Danmark* will proceed at once to Etah and other northern ports and, after picking up the members of the expedition, will land them either at St. John's, Newfoundland, or Sydney, Cape Breton, late in August or early in September. Mr. Tanquary sailed from Copenhagen June 8 and arrived in New York on June 20. He has brought with him full reports of the work of the expedition up to the spring of this year.

Rasmussen's Crossing of Greenland in 1912, and His Plans for the Present Summer. The record of a remarkable sledge journey across northern Greenland is found in Knud Rasmussen's "Report of the First Thule Expedition, 1912" (*Meddelelser om Grønland*, Vol. 51, 1915, pp. 285-340) and in the account of his comrade Peter Freuchen in the same volume (pp. 343-370). (For an account of the various crossings of Greenland, together with map, see the *Geogr. Journ.*, Vol. 42, 1913, p. 546. A better map is now available on page 286 of the report noted herein.) The route lay from Clements Markham Glacier on the west coast just south of Etah to the head of Danmark Fiord, then down this fiord and up Independence Fiord, and back again to the west coast at Thule, a station recently established a little to the south of Etah. On the inward (eastward) journey the explorers made an average run of 38.4 miles a day and on the return 26.6 miles. The distance covered from the west coast to the east was 650 miles. At Navy Cliff the explorers walked literally in the still visible footsteps left by Peary and Astrup twenty years before. The monotonous country, the storm-swept desert of ice, gave the expedition much trouble. The loss of three dogs in the deep crevasses at the northeastern edge of the main ice sheet and the constant risk to the explorers themselves is told with dramatic simplicity. The greatest altitude reached was 2,225 meters (7,298 feet). At the edge of Peary Land, in latitude 82° 10′ N., close to the mouth of Brönlund Fiord, old Eskimo tent rings were found, one of the most interesting discoveries of the expedition. They faced the fiord (northeast), with entrances looking out toward the fiord, where there is plenty of seal; in the uplands behind are musk-ox, hare, and ptarmigan. Remains of the winter houses of the Eskimo were not found. Besides numerous scientific observations of great value the expedition made a good map of the head of Independence Fiord. The discovery by Mylius Erichsen of the non-existence of Peary Channel is thus confirmed by cartographic evidence (see the article, with map, in the June *Review*, pp. 448-452). The northwestern edge of the fiord was traversed and the ascent to the ice made over Nyeboe Glacier. The general map, Plate XII, shows a great predominance of wind directions straight off the ice. These anti-cyclonic conditions support the current theory of the dominating atmospheric control exercised by great ice caps.

In order to complete the exploration of the region where Peary Land is attached to the mainland of Greenland, Rasmussen is again engaged in an expedition this summer. He left Copenhagen on April 1 and reached Holstenborg on the southwestern coast about April 20. Here he intended to board his vessel the *Kap York* and hoped to arrive at Thule in order to begin his cross-journey by June 1. He was again to be accompanied by Peter Freuchen as topographer and also by Lange Koch as geologist and two Eskimos from the Cape York district. The route will lie from Clements Markham Glacier to Sherard Osborne Fiord on the north coast. Here, if possible, the descent from the inland ice will be made and the journey continued to Nordenskiöld Inlet (see map in the June *Review*, p. 450) and thence through the critical region to the head of Independence Fiord. If it is impracticable to descend from the inland ice at Sherard Osborne Fiord, the course will be shaped directly for Independence Fiord. Rasmussen expects to return about August 10 or 15 so as to reach Thule in time to catch the *Kap York*, which will sail for Denmark early in September. In addition to the topographical surveys, geological and ethnographical—mainly relating to Eskimo migrations—investigations will be made.

In case untoward circumstances prevent Rasmussen from beginning the ascent of the inland ice by June 1, the latest possible date, he has arranged for an alternative expedition to Melville Bay. This bay has never been thoroughly studied, and yet it is of the greatest importance with regard to Eskimo migrations on the west coast. It is intermediate between the inhabited Cape York and Upernivik districts, although itself uninhabited throughout the whole period of Danish colonization. Across it the Eskimos must have gone in their southward migration. This is a question which Rasmussen would like to settle before he sets out on his contemplated expedition to the American Eskimos which will extend over several years.

WORLD AS A WHOLE AND LARGER PARTS

The Strategic Geography of the British Empire. With the hope of furthering the study of the strategic geography of the British Empire, that it might "become a citizen's subject throughout the British lands," a paper under this title was delivered early in the year by Vaughan Cornish before the Royal Colonial Institute (*United Empire*, Vol. 7, N. S., No. 2, London, 1916). The worldwide distribution of the Empire's recruiting and supply bases leads to special emphasis on the lines of communication. The major lines embrace most of the great trade routes of the world. They include the routes between Canada and the British Isles, and the British Isles and India and Australia. The latter proceeds via the "great maritime defile" of the Mediterranean with its terminal "stops" of Gibraltar and Aden and the median stops of Egypt and the Suez Canal. The location of Egypt gives it great utility as a central depot. India and Australia may be considered as occupying two apexes of the triangular Indian Ocean, the third being occupied by the Cape. The Cape also possesses a central location whose value would, of course, be greatly augmented in event of closure of the Suez route. Lines of communication across the Pacific are far less important; indeed this ocean is rather to be regarded as a gap. Its primary use would be as a route for carrying men and supplies to India if the Suez route were not available.

North of the "great maritime defile" lies the "land defile" of Constantinople. Its value to the Central Powers is as a naval base for attack on Egypt and as a line of communication to India via Persia either northward through Kabul and Quetta or southward to Karachi, hence the importance of British control in the Tigris and Euphrates delta, as well as occupation of positions in or on the Persian Gulf. To maintain communications westward from the defile it is necessary to pass through the corridor country of Bulgaria and thence via Rumania or Serbia. The latter, taking advantage of the Nish-Saloniki railroad, is preferable. Connection is thus made with the great naval and military bases of the Central Powers, i. e. the Cologne and Hamburg district. The North Sea outlet of this district occupies a location inferior to that of the Low Countries as a base for aërial or naval attack on Great Britain. Britain holds this sea by commanding the passages between Kent and France and between the Orkneys and Norway, though, for purposes of commercial blockade, the line has to be extended by patrol northwards into polar latitudes. In respect of strategic geography, Ireland, it must be remembered, holds a position relative to the major island analogous to that of Britain relative to the continent.

GEOGRAPHICAL NEWS

Excursion of the Geographic Society of Chicago to the St. Lawrence. The Geographic Society of Chicago has arranged for its members and their friends an excursion to the St. Lawrence region from July 17 to 28. The itinerary is as follows: Leave Chicago, July 17; Toronto, July 18; Kingston, July 19; Montreal, July 19; Quebec, July 20; Chicoutimi, July 20-21; Quebec, July 22; Montreal, July 23-24; Chazy, N. Y., July 24; Plattsburg, July 24; Ausable Chasm, July 25-26; Ticonderoga, July 26; Lake George, July 26; Saratoga, July 26-27; Albany, July 27-28; New York or Boston, July 28. The trip will cost from $125 to $130. All inquiries should be directed to Mr. O. M. Schantz, Chairman of the Excursion Committee, Otis Building, 10 South La Salle Street, Chicago, Ill.

Fifth Brazilian Geographical Congress. The Fifth Brazilian Geographical Congress will be held September 7 to 16, 1916, in Bahia under the auspices of the state of Bahia and the Instituto Geographico e Historico of Bahia. The congress will be subdivided into twelve sections, as follows: I, Mathematical Geography (astronomical geography, topography, geodesy); II, Physical Geography (aërology, oceanography, geomorphology); III, Physical Geography (hydrography, potamology, limnology); IV, Vulcanology and Seismology; V, Climatology and Medical Geography; VI, Biogeography (phytogeography and zoögeography); VII, Human Geography; VIII, Political and Social Geography; IX, Economic and Commercial Geography, including Agricultural Geography; X, Military and Historical Geography; XI, Teaching of Geography, Rules and Nomenclature; XII, Regional Monographs. Papers intended for presentation should be sent to reach the Secretary of the Organizing Committee not later than August 30. Only papers not previously published will be accepted and they should be in typewritten form. The final program of the congress will be distributed at the opening session. In addition to the regular sessions, there will be a geographical exhibit, consisting of Brazilian works on geography, maps and photographs, geographical apparatuses, and a gallery of native and foreign geographers who have contributed to the study of the geography of Brazil. The membership fee is: for individuals, 10 milreis ($5.46); for societies, 20 milreis.

Geographical Recommendations of the Second Pan-American Scientific Congress. The following recommendations and suggestions adopted on January 8, 1916, at the final session of the Second Pan-American Scientific Congress in Washington, D. C., are of interest to geographers. They are reproduced from an abstract in *Science* for February 11, 1916 (pp. 202-204). A full statement is contained in "The Final Act" of the congress, prepared by J. B. Scott (Government Printing Office, Washington, D. C., 1916). The congress recommends—

Art. III. That the American republics undertake as soon as possible: (a) accurate, geodetic measurements which may serve to determine limits, national and international, and to contribute to the discovery of the true shape of our planet; (b) magnetic measurements of their respective surfaces, and the establishment of several permanent magnetic observatories in which it may be possible to carry on during long periods of time observations concerning the secular variation of the magnetic characters of the earth; (c) to extend their gravimetric measures (obtained by means of the pendulum) to those regions where these measurements may not have been taken, in order to obtain more information to determine the true shape of the surface and the distribution of the terrestrial mass.

Art. IV. That the nations of the American continent establish, by means of their offices of geodesy or by committees appointed for that purpose, an international triangulation; that the governments of American nations reach an agreement for the purpose of creating an office or congress of cartography and geography.

Art. V. That proper steps and measures be taken to bring about in the American republics participating in the congress a general use of the metric system of weights and measures, in the press, in educational and scientific work, in the industries, in commerce, in transportation, and in all the activities of the different governments.

Art. VI. That, as recommended by the First Pan-American Scientific Congress, meteorological organizations be installed to serve as a basis for the establishment of the Pan-American meteorological service; and that the republics not yet possessing organized meteorological service establish the same as soon as may be practicable.

Art. VIII. That an American committee on radio communication be appointed to assist in development of the science and art of radio communication, to the end that it may serve to convey intelligence over long distances and between ships at sea more quickly and accurately, and to bring into closer contact all of the American republics.

Art. XI. That the question of the reclamation of arid lands is one that should receive the immediate and careful consideration of the several governments of the American states, so that there may be increased areas of productive land to meet the needs of their increased populations.

Art. XIV. That information be disseminated regarding the agricultural production of the different countries and of the publications relating thereto.

Art. XXXVI. That the American republics make uniform, as far as possible, the basis and adopt a common time for the taking of census, and adopt uniform principles in commercial and demographic statistics.

In conclusion, the congress specially recommends, for execution by the present Pan-American Union or by means of any other institution in actual existence or to be established, the following propositions:

The establishment of an intellectual Pan-American union to unite the various associations of different character—technical, medical, legal, etc.—divided into sections according to the groups that may be deemed convenient, such as a university section, a library section, etc.

The details thereof are contained in the records of the congress in the form of four propositions dealing with the proposed union. The organization that may take charge of its establishment will lay broad and deep the true foundations of intellectual Pan-Americanism.

SUMMER SESSION COURSES IN GEOGRAPHY

(*Unless otherwise noted, the instructors belong to the faculty of the institution at which they are giving courses.*)

Boston University, Boston, Mass. (July 8–August 19).
- Natural Resources. Asst. Prof. R. B. Wilson.
- Economic History of the United States. Asst. Prof. C. P. Huse.

University of California, Berkeley (June 26–August 5).
- An Introduction to College Physiography. Mr. Paul Vander Eike of the Bakersfield (Cal.) Junior College.
- Field Course in Physiography in the Mount Whitney Region of the Sierra Nevada. Dr. J. P. Buwalda.
- Physical Geography in the High School. Mr. Paul Vander Eike.
- Economic Geography. Mr. E. W. Barnhart of the Berkeley (Cal.) High School.
- Geographic Botany of the Pacific Coast. Mr. F. J. Smiley.
- Race. Asst. Prof. T. T. Waterman.

University of Chicago (June 19–July 26 and July 27–September 1).
- Physiography. Prof. R. D. Salisbury and Asst. Prof. R. T. Chamberlin, first term; Dr. E. A. Stephenson, second term.
- Mineral Resources of North America: Introduction to Economic Geology. Mr. R. C. Moore.
- Field and Laboratory Course in Geology. Dr. E. A. Stephenson. Second term.
- Principles of Geography. Prof. R. H. Whitbeck of the University of Wisconsin. First term.
- Economic and Commercial Geography. Assoc. Prof. J. P. Goode.
- Political Geography. Assoc. Prof. W. S. Tower.
- Geography of North America. Miss M. J. Lanier.
- Economic Geography of the United States. Assoc. Prof. J. P. Goode.
- Influence of Geography on American History. Miss M. J. Lanier.
- Geography of South America. Assoc. Prof. W. S. Tower.
- Geography in the High Schools. Prof. R. H. Whitbeck. First term.
- Geography in the Primary Grades: Home and World Geography. Assoc. Prof. Zonia Baber.
- Geography in the Grammar Grades: North America. Assoc. Prof. Zonia Baber.

  - Field Course in Geology at Devil's Lake, Wisconsin. Dr. E. A. Stephenson, first term; Prof. A. C. Trowbridge of the University of Iowa, second term.
  - Field Course in Geology in Saint Genevieve County, Missouri. Prof. Stuart Weller. June 19–July 17.
  - Field Course in the Geology of the Cascade Mountains, Oregon. Asst. Prof. J. H. Bretz. August 1–31.
  - Field Course in Geography in the Environs of Chicago. Mr. T. R. Taylor. Second term.
  - Field Course in Geography in the Lower Saint Lawrence Valley. Assoc. Prof. W. S. Tower. September 2–30.
  - Physiographic Plant Ecology. Prof. H. C. Cowles and Dr. G. D. Fuller.
  - Ethnology. Assoc. Prof. Frederick Starr.
  - The American Race. Assoc. Prof. Frederick Starr.

- *Cleveland School of Education* (conducted jointly by Western Reserve University and the Cleveland Normal School), Cleveland, Ohio (June 19–July 28).
  - Methods in Elementary Geography and Local Field Studies. Prof. W. M. Gregory of the Cleveland Normal School.
  - Industrial Geography and Studies of Cleveland's Industries. Prof. W. M. Gregory.
  - Excursion to Glacier National Park. Prof. W. M. Gregory. July 31 to September 2.
- *University of Colorado,* Boulder (June 26–August 5).
  - Principles of Earth Science. Prof. W. E. McCourt of Washington University, St. Louis.
  - Field Geology. Prof. W. E. McCourt.
  - Geographic Influences. Prof. W. E. McCourt.
  - Climatology. Prof. W. E. McCourt.
  - Geographic and Geologic Excursion to Interesting Places in Colorado, Utah, and Wyoming. Prof. W. E. McCourt. August 5–29.
  - Special Lectures: (1) The Evolution of the Map; (2) Work and Weather. Prof. W. E. McCourt.
- *Columbia University,* New York City (July 10–August 18).
  - Mathematical Geography. Prof. Harold Jacoby.
  - Geodetic Surveying. Field work at Camp Columbia, Morris, Conn. Prof. Harold Jacoby, Mr. William Bowie of the U. S. Coast and Geodetic Survey, and assistants. July 5–26.
  - Physical Geography and Its Economics Aspects. Assoc. Prof. D. W. Johnson and Mr. A. K. Lobeck.
  - Physiography of the Eastern United States. Assoc. Prof. D. W. Johnson.
  - Field Work in Physiography in the Environs of New York City and the Eastern Section of New York State. Assoc. Prof. D. W. Johnson and Mr. A. K. Lobeck.
  - Geographical Delineation and Map Interpretation. Mr. A. K. Lobeck.
  - Commercial Geography. Prof. C. T. McFarlane.
  - Geography of Industry and Trade. Prof. C. T. McFarlane.
  - International Trade. Prof. W. F. Gephart of Washington University, St. Louis.
  - Geography of Europe, with Special Reference to the European War. Assoc. Prof. D. W. Johnson.
  - The Teaching of Geography in the Lower Grades. Miss C. B. Kirchwey.
  - The Teaching of Geography in the Upper Grades. Miss C. B. Kirchwey.
  - The Teaching of Regional Geography in the Junior High School. Miss C. B. Kirchwey.
  - Continental Geography for the Elementary School. Miss C. B. Kirchwey.
- *Cornell University,* Ithaca, N. Y. (July 6–August 16).
  - Physical Geography. Asst. Prof. O. D. von Engeln.
  - Commercial and Industrial Geography. Asst. Prof. O. D. von Engeln.
  - Physical Geography, Laboratory Course. Mr. E. D. Elston.
  - Field Course in Geography and Geology. Asst. Prof. O. D. von Engeln and assistants.
  - Short local excursions; all-day excursions to Taughannock Gorge and Falls, July 15, Enfield Gorge and Falls, July 29, east shore of Cayuga Lake, August 5; and longer excursions to Niagara Falls and Gorge, August 12 and 13, and Watkins Glen, July 22. Asst. Prof. O. D. von Engeln and assistants.
- *Denison University,* Granville, Ohio (June 19–July 28).
  - Industrial Geography. Prof. Frank Carney.
  - Geography of South America. Mr. J. M. Asensio of the U. S. Military Academy at West Point.
  - Teacher's Course in Geography. Prof. Frank Carney.
  - Round Table Conferences in Geography. Prof. Frank Carney.

University of Denver, Denver, Colo. (June 19–July 28).
Commercial Geography. Prof. G. A. Warfield.

Harvard University, Cambridge, Mass. (July 10–August 19).
Course in Field Geology in the San Juan Mountains, southwestern Colorado. Prof. W. W. Atwood and Dr. W. P. Haynes.
Physiographic Field Studies. Prof. W. W. Atwood.
Economic History of Europe and the United States during the Nineteenth Century. Prof. E. F. Gay.

University of Illinois, Urbana (June 19–August 11).
Economic Resources. Asst. Prof. Simon Litman.
Economic Phases of United States History, 1820–1860. Dr. C. M. Thompson.
Animal Ecology. Asst. Prof. V. E. Shelford.

State Normal School, Terre Haute, Indiana.
History of the Earth and Its Inhabitants. Mr. W. A. McBeth.
Elements of Geography. Mr. B. H. Schockel.
Regional Geography of Nations. Mr. W. A. McBeth.
Social Geography: Institutions and Life of Nations. Mr. B. H. Schockel.
Regional Geography of Europe. Mr. W. A. McBeth.
Geographic Influences in American History. Mr. B. H. Schockel.

Indiana University, Bloomington (June 15–August 11).
Economic Geography. Asst. Prof. F. E. Williams of the University of Wisconsin.
Relation of Geography to American History. Asst. Prof. F. E. Williams.
Teaching of Geography. Asst. Prof. F. E. Williams.
Conservation of Natural Resources. Prof. E. R. Cumings.
Course in Field Geology of the Clay City (Ind.) Quadrangle. Assoc. Prof. J. W. Beede.
History of Indiana [including early exploration and settlement]. Dr. Logan Esarey.

University of Iowa, Iowa City (June 19–August 26).
Physical Geography. Prof. A. C. Trowbridge and Mr. W. D. Shipton.
Physical Geography. Asst. Prof. A. O. Thomas.
Physiography of Iowa. Prof. J. L. Tilton of Simpson College. [At the Iowa Lakeside Laboratory at Lake Okoboji.]
The Evolution of the Western States. Asst. Prof. Louis Pelzer.
Foreign Commerce of the United States. Prof. P. S. Peirce.

Johns Hopkins University, Baltimore, Md. (July 5–August 15).
Physical and Economic Geography. Mr. D. G. Thompson of Goucher College.

University of Kansas, Lawrence (June 8–July 19 and July 20–August 16).
Physiography. Prof. Erasmus Haworth (June 8–July 19).
Commercial Geography. Asst. Prof. W. McG. Duffus.

Leland Stanford Junior University, Stanford University, Cal.
Course in Field Geology in the Santa Inez Range near Santa Barbara, California. Prof. Bailey Willis and Prof. D. M. Folsom.

Louisiana State University, Baton Rouge (June 5–August 4).
Geological and Geographical Field Work in the Asheville Region in North Carolina. Prof. F. V. Emerson. August 9–30.

University of Michigan, Ann Arbor (July 3–August 25)
Teacher's Course in Physiography. Dr. C. O. Sauer and assistant.
Geographic Influences. Dr. C. O. Sauer and assistant.
Commercial Geography. Dr. C. O. Sauer and assistant.
Special Lecture on the Geology of Niagara Falls. Dr. C. O. Sauer. July 19.
Excursion to Niagara Falls under the direction of Dr. C. O. Sauer. July 21ff.
Special Lecture on Early American Cartography. Mr. W. L. Clements, Regent of the University of Michigan, Bay City, Mich.

University of Minnesota, Minneapolis (June 12–July 21).
Physiography. Asst. Prof. C. J. Posey.
Geography of North America. Asst. Prof. C. J. Posey.
Teacher's Course in Geography. Asst. Prof. C. J. Posey.
Four Field Courses in Geography: (1) Isle Royal, June 21–July 24; (2) northeastern Minnesota, July 5–July 18; (3) central Colorado, Yellowstone National Park, July 25–August 8; (4) Glacier National Park, August 8–21. Asst. Prof. E. M. Lehnerts.

University of Missouri, Columbia (June 8–August 4).
  Fundamentals of Physical and Human Geography. Dr. A. E. Parkins.
  Geographic Influences in American History. Dr. A. E. Parkins.
  Teacher's Geography. Dr. A. E. Parkins and Prof. L. F. Thomas.
  Geographical Excursion to the Mississippi River and the Great Lakes. Dr. A. E. Parkins. August 7–21.

University of Montana, Missoula (June 19–July 29).
  Physiography. Prof. J. P. Rowe, and Mr. E. E. Holmes of the College of Montana, Deerlodge, Mont.
  Geography and Geology of Montana. Prof. J. P. Rowe and Mr. E. E. Holmes.
  History of Montana [exploration, settlement, and development]. Dr. H. H. Swain, Assistant State Superintendent of Public Instruction.
  Physiography of the Region about the Biological Station at Yellow Bay on Flathead Lake. Prof. J. M. Elrod.

University of Nebraska, Lincoln.
  Physical Geography. Assoc. Prof. N. A. Bengtson.
  Industrial Geography. Assoc. Prof. N. A. Bengtson.
  Geography of Nebraska. Assoc. Prof. N. A. Bengtson.
  Geographical Short Trips to Local Points. Assoc. Prof. N. A. Bengtson.
  Geological Excursion to the Black Hills and Rocky Mountains Region. Prof. E. H. Barbour and Asst. Prof. E. F. Schramm.
  Commercial Geography. Dr. Minnie T. England.
  Economic History of the United States. Prof. G. O. Virtue.

Nebraska Wesleyan University, Lincoln (June 6–July 28).
  Geography of the United States. Prof. W. G. Bishop.
  Industrial Geography. Prof. W. G. Bishop.
  Normal [i. e. general world] Geography. Prof. W. G. Bishop.
  Physical Geography. Prof. W. G. Bishop.

New York University, New York City (July 10–August 18).
  Principles of Economic Geography. Assoc. Prof. R. B. Earle of Hunter College, New York City.
  Field Course in General Physiography and Geology. Prof. J. E. Woodman.
  Special Topics in Geography and Geology. Prof. J. E. Woodman and Dr. R. B. Earle.
  Research in Geography and Geology. Prof. J. E. Woodman and Dr. R. B. Earle.
  Methods of Teaching Business Arithmetic, Business Law, and Commercial Geography. Mr. W. A. Barber.
  Geodesy. Prof. Alexander Haring.

University of North Carolina, Chapel Hill (June 13–July 28).
  General Geography. Mr. J. E. Smith.
  High School Geography. Mr. J. E. Smith.
  Elementary Geography. Mr. J. E. Smith.
  The Teaching of Geography. Prof. M. C. S. Noble.
  Recent Industrial Development of North Carolina. Dr. J. H. Pratt, State Geologist. [Series of ten lectures, July 3–14.]

University of North Dakota, University (June 19–July 28).
  Physiography. Assoc. Prof. H. E. Simpson.
  Field Geology and Physiography at the Biological Station at Devil's Lake. Assoc. Prof. H. E. Simpson.
  Latin America. [Survey of the geography, history, races, civil development, nature of business opportunities.] Prof. H. R. Brush.

Northwestern University, Evanston, Ill. (June 26–August 5).
  General Geology: Introduction to Geology and the Physiography of the Lands. Prof. U. S. Grant.
  Geology and Physiography of the United States. Prof. U. S. Grant.
  Field Course in the Upper Lake Superior Region. Prof. U. S. Grant.

Oberlin College, Oberlin, Ohio (June 16–August 3).
  Field Course in Geology in the Deerfield River Region of Southern Vermont. Prof. G. D. Hubbard.
  Physical, Political, Commercial, and Historical Geography of England. Prof. L. B. Hall.

Ohio State University, Columbus (June 19–August 11).
  Physiography. Asst. Prof. J. E. Carman of the University of Cincinnati.
  The Teaching of Physiography. Asst. Prof. J. E. Carman.

University of Oregon, Eugene (June 19–July 28).
  Meteorology. Asst. Prof. A. E. Caswell.

George Peabody College for Teachers, Nashville, Tenn. (June 15–July 21 and July 22–August 26).
  Elements and Principles of Geography: Section 1. Assoc. Prof. C. C. Colby.
  Elements and Principles of Geography: Section 2. Miss Mary Dopp of the Harper High School, Chicago.
  Commercial Geography. Assoc. Prof. C. C. Colby.
  Geography, Peoples, and Commerce of South America. Assoc. Prof. C. C. Colby.
  The Influence of Geography on American History. Miss Mary Dopp.
  Industrial History of the United States. Prof. Eugene Fair of the State Normal School, Kirksville, Mo.
  Economic History of the United States. Prof. W. E. Morrow of the State Normal School, Warrensburg, Mo. Second term.

Pennsylvania State College, State College, Pa. (June 26–August 4).
  Physical Geography. Dr. H. J. Roddy of the Millersville (Pa.) State Normal School.
  Teacher's Geography. Prof. H. J. Roddy.
  The Teaching of Geography and History in Elementary Schools. Miss Anne U. Wert of the Teachers' Training School, Harrisburg, Pa.
  The Teaching of Geography and History in the Fifth and Sixth Grades. Miss Anne U. Wert.
  The Teaching of Geography and History in the Seventh and Eighth Grades. Miss Anne U. Wert.
  Economic History of the United States. Dr. A. E. Martin.

University of Pennsylvania, Philadelphia (July 6–August 18).
  Commercial Geography of the United States. Asst. Prof. G. B. Roorbach.
  Climate and Its Economic Influences. Asst. Prof. G. B. Roorbach.
  Resources and Industries of South America. Asst. Prof. G. B. Roorbach.
  Introduction to Anthropology. Mr. R. T. Aitken.
  The North American Indian. Mr. R. T. Aitken.
  Peoples of the Pacific. Mr. R. T. Aitken.

University of South Carolina, Columbia (June 26–July 21).
  Physical Geography. Prof. A. C. Moore.

University of South Dakota, Vermillion (June 19–July 29).
  Geography and the Teaching of Geography. Mr. M. C. Helm, Superintendent of Schools, Pierre, S. D.
  Physical Geography and the Teaching of Physical Geography. Mr. M. C. Helm.

University of Tennessee: Summer School of the South, Knoxville (June 20–July 28).
  Home and World Geography (for Primary Teachers). Miss Bertha Henderson of the University High School, University of Chicago.
  North America (for Teachers of Grammar Grades). Miss Bertha Henderson.
  Physical and Commercial Geography (for High School Teachers). Miss Bertha Henderson.

University of Texas, Austin (June 12–July 27).
  Physiography: Introduction to Science. Prof. F. W. Simonds.
  Physiography: Continuation of the Previous Course. Prof. F. W. Simonds.
  The Economic and Commercial Geography of the Southwest. Prof. L. M. Keasbey.
  General Geography. Mr. E. G. Littlejohn of the Alamo School, Galveston.
  Physical Geography. Mr. E. G. Littlejohn.

Tulane University of Louisiana, New Orleans (June 12–July 22).
  Geography. Mr. C. C. Hensen, Principal of the Newman Normal Training School, New Orleans.
  Physiography. Asst. Director J. A. Lyon.

University of Utah, Salt Lake City (June 12–July 21).
  The Teaching of Geography. Miss Anna Youngberg.
  The Teaching of Nature-Geography, History and Civics: Primary Methods. Miss Anna Youngberg.

University of Virginia, Charlottesville (June 20–August 3).
  Physical Geography. Miss L. C. Kelley of the John Marshall High School, Richmond, Va.
  Industrial Geography. Miss L. C. Kelley.
  Aims and Methods in Geography. Miss L. C. Kelley.
  Latin American Social Development [a study of the human geography of the Latin-American States]. Adjunct Prof. J. C. Bardin.

State College of Washington, Pullman (June 19–July 29).
Review Courses for Examination and Certification in Geography and Physical Geography. [Instructor not given.]

University of Washington, Seattle (June 19–July 28).
Physical and Regional Geography. Prof. Henry Landes.
Traveling Course in Geology to the Glacier National Park and Yellowstone National Park. Prof. E. J. Saunders. June 19 to July 28.
Three General Lectures on "Discoveries in the Northwest," "Explorations in the Northwest," and "Occupation of the Northwest." Prof. E. S. Meany.
Three General Lectures on "Geografia Física, Politica y Economica de Argentina," "Geografia Física, Politica y Economica del Brasil," "Geografia Física, Politica y Economica del Peru y de Bolivia." Mr. L. A. Santander.
Physiography and Meteorology. Dr. M. M. Leighton.

West Virginia University, Morgantown (June 19–July 29).
The Teaching of Arithmetic, Geography and History. Miss S. E. Griswold of the Chicago Normal School.
American Social and Economic History. Mr. C. P. Higby of the Fairmont (Va.) State Normal School.

University of Wisconsin, Madison (June 26–August 1).
Physical and Applied Geography. Asst. Prof. Edward Steidtmann.
Glaciers and Glaciation. Prof. Lawrence Martin.
Field Course in Physiography and Geology at Devil's Lake, Wisconsin. Prof. Lawrence Martin. August 7–September 2.
Commercial and Industrial Geography. Prof. Lawrence Martin.
Agricultural Geography. Mr. V. C. Finch.
Geography of South America. Mr. V. C. Finch.
Geography of Wisconsin. Prof. Lawrence Martin.
Climate and Man. Mr. E. R. Miller of the U. S. Weather Bureau.
Topographical Surveying: Field and Office Practice in Camp at Devil's Lake. Assoc. Prof. L. S. Smith and assistants.

PERSONAL

DR. CHARLES C. ADAMS of the New York State College of Forestry at Syracuse University will, this summer, be in charge of the fish survey of Oneida Lake which was begun last year. Last summer the western half of the lake was covered, and this season the remainder of the lake will be surveyed. Professor T. L. Hankinson will collaborate with Doctor Adams.

DR. HENRYK ARCTOWSKI, Chief of the Science Division of the New York Public Library, is engaged, in collaboration with Mr. L. Kirsch, in the preparation of a study of the seasonal changes of storm frequency distribution in the United States.

PROFESSOR WALLACE W. ATWOOD of Harvard University, in addition to his direction of the summer field work in the San Juan mountain region of southwestern Colorado, noted elsewhere, will also have charge of a U. S. Geological Survey party and will continue his work on the physiography of the San Juan region. Dr. Kirtley E. Mather is to be associated with him in the Government work.

MR. O. E. BAKER of the Office of Farm Management of the Department of Agriculture will this summer be engaged in statistical studies chiefly bearing on the relation of geographic factors to the distribution of crops and farm enterprises in connection with the Atlas of American Agriculture now in preparation.

PROFESSOR HARLAN H. BARROWS of the University of Chicago will be engaged this summer in work for the Illinois Geological Survey.

MR. E. F. BEAN, Chief of Field Parties of the Geological and Natural History Survey of Wisconsin, will be in charge this summer of magnetic exploration in north-central Wisconsin for the Survey.

PROFESSOR N. A. BENGTSON of the University of Nebraska, in addition to the courses he will give at the summer session of that institution, noted elsewhere, will continue his studies, previously begun under the auspices of the state geological survey, of the Big Blue River valley.

PROFESSOR A. P. BRIGHAM of Colgate University will spend the summer after August 1 at Highland Light, Cape Cod, where he will devote some attention to the geographic problems of the Cape.

MR. WILBUR G. BURROUGHS will give courses in geography, physiography, and geology at the Chautauqua Summer Schools, Chautauqua, N. Y., during the summer.

PROFESSOR FRANK CARNEY of Denison University, whose courses at the summer school of that institution are noted elsewhere, will also be engaged in the preparation of a report for the Ohio Geological Survey.

PROFESSOR JAMES F. CHAMBERLAIN of the California State Normal School at Los Angeles expects to attend the meeting of the National Educational Association in New York City, July 3 to 8. Later in the summer he plans to do some field work in California.

PROFESSOR FREDERIC E. CLEMENTS of the University of Minnesota expects to spend the early summer in ecological work in the badlands of northwestern Nebraska, in the big badlands of South Dakota, and the badlands of the Little Missouri in North Dakota. Later he will spend a month at the alpine laboratory of the university's Department of Botany on Pike's Peak engaged in the spectrophotometric measurement of light. Professor Clements then plans to attend the meetings of the Pacific Division of the American Association for the Advancement of Science at San Diego, August 8 to 10, where he will give a paper on plant succession in badlands. After the meeting he will return through Arizona and New Mexico, spending a month or more in the Cretaceous and Triassic badlands. He hopes this work will complete his badland studies of the past two summers to such a degree that it will prove possible to publish during the coming winter a book on badland vegetation which he has under preparation.

PROFESSOR COLLIER COBB of the University of North Carolina expects to spend the summer in a study of the coast line from Cape Hatteras southward to Cape Sable with special reference to the coast people.

MR. N. H. DARTON of the U. S. Geological Survey has recently returned from a trip to Cuba where he went to investigate prospects for artesian water. Many facts were obtained as to the geology and physiographic development of the Guantanamo basin.

PROFESSOR W. M. DAVIS is at present engaged in preparing a report on his journey to the Pacific in 1914.

PROFESSOR CHARLES R. DRYER expects to spend a large part of the summer in making a field survey of the physical, economic, and human geography of the state of Indiana in this, the centennial year of her age.

PROFESSOR B. K. EMERSON of Amherst College expects to spend the summer in geological work in central Massachusetts and southern New Hampshire.

PROFESSOR B. E. FERNOW of the University of Toronto will, as a member of the Forestry Committee of the Commission of Conservation of Canada, participate in the work of that organization in the study of the forest resources of British Columbia, which it is hoped to complete this year. The results will be in part embodied on a map showing the distribution and quantity of commercial material, which, it is expected, will be published before the end of the year.

PROFESSOR ELIZABETH F. FISHER of Wellesley College will conduct a geographical excursion to the National Parks of the Rocky Mountains. The party will leave Boston on July 3 and return to Boston on August 4. The route will include Niagara Falls, Yellowstone National Park, Glacier National Park, the Arrowhead Lakes, the Kootenay country, and the Canadian Rockies.

MAJOR GENERAL A. W. GREELY is employing his leisure time at his country home at Center Conway, N. H., in writing on Alaska and on Polar exploration.

DR. ROBERT F. GRIGGS of Ohio State University will, with the aid of a grant from the National Geographic Society, continue this summer his researches in the Katmai district of Alaska. He hopes to explore the hitherto unvisited volcanoes of the district but will devote his attention primarily to a study of the revegetation of the region devastated by the great eruption of Mt. Katmai in 1912. Doctor Griggs, it will be recalled, contributed an article on "The Effect of the Eruption of Katmai on Land Vegetation" to the *Bulletin of the American Geographical Society,* Vol. 47, 1915, pp. 193–203.

PROFESSOR J. W. HARSHBERGER of the University of Pennsylvania will give a course on systematic and field botany and one on advanced botany at the summer session of the Biological Laboratory of the Brooklyn Institute of Arts and Sciences at Cold Spring Harbor from July 5 to August 16. The first course will make the students familiar with the phytogeographical regions of Long Island: the sea beach and sand dune flora of the southern coast, the pine barren region of the central part of the island, the natural prairie of Hempstead Plain, the lake vegetation of Lake Ronkonkoma, the deciduous forest of the great terminal moraine, and the salt marshes and submerged sea gardens in the immediate vicinity of Cold Spring Harbor.

Dr. Ellsworth Huntington has just completed an investigation of the causes of storms and peculiar seasons such as the spring of 1916. Another piece of research which Doctor Huntington has been carrying on for the past fifteen months is also just terminated. It relates to the physical strength and mental activity of negro boys and girls at Hampton Institute. Daily tests of ten boys and ten girls were made. Although the tests were undertaken for geographical purposes they probably represent a longer and less interrupted series of tests than have ever been made on so large a number of persons for psychological purposes. Doctor Huntington expects to devote a good part of the summer to working up the results.

Dr. Wellington D. Jones of the Department of Geography of the University of Chicago is to spend six months in eastern Asia studying the geography of Japan, Korea, Manchuria, northern and central China. Doctor Jones will return to Chicago about January 1.

Mr. Leonard O. Packard of the Boston Normal School intends this summer to continue his study of the causes of the changes of population in New England.

Mr. P. Lee Phillips, Chief of the Division of Maps and Charts of the Library of Congress, has just completed a monograph on "The Rare Map of the Northwest by John Fitch, Inventor of the Steamboat." In addition, he has two monographs in manuscript: one on John With's first map of Virginia, 1585, and another on Captain John Smith's map of Virginia, 1607. Mr. Phillips has also recently completed a descriptive list of maps of California and San Francisco to 1865 inclusive and an extensive descriptive list of maps and views of the city of Washington, with a supplement relating to Mount Vernon. These two publications are in the hands of the Librarian of Congress on approval with a view to their publication. Mr. Phillips is also getting ready for the press a work on which he has been engaged for some twenty years, which is to be entitled "A Descriptive List of Books and Magazine Articles Relating to Maps, Map-makers and Views." A small pamphlet has recently appeared from his pen and is now ready for distribution, "Notes on the Cataloging, Care, and Classification of Maps and Atlases, Including a List of Publications Compiled in the Division of Maps and Charts."

Mr. J. W. Redway, the author of well-known geographical text-books, is preparing a revised edition of his "Commercial Geography" and has in hand a new text-book on the economic geography of the United States. In addition, he is now engaged in a study of atmospheric dust indoors and out-of-doors, a subject on which he has already published several papers.

Dr. John L. Rich of the Geological Department of the University of Illinois will spend the summer in a study of the glacial geology of the Catskill Mountains under the auspices of the New York State Geological Survey.

Professor V. E. Shelford of the University of Chicago will give a course of lectures and seminars on the dynamics of animal growth, with particular reference to climate, at the Graduate School of Agriculture at Amherst, Mass., during the first week of July and will devote the chief part of the summer to teaching animal ecology in the summer session of the University of Illinois, as noted elsewhere, and investigating the relation of weather to the development of pest insects for the Illinois State Laboratory of Natural History.

Professor J. Russell Smith of the University of Pennsylvania will be engaged this summer in preparing a volume setting forth the results of his investigations to date on the question of conservation and agricultural extension through tree-crop agriculture.

Mr. Eugene Van Cleef of the State Normal School of Duluth, Minn., intends this summer to continue his studies of the frost problem as affecting the Duluth region. Heretofore frost prevention has been studied in that part of the state with respect to extensive crops. Indications are that during the next few years dairying and truck gardening for the individual farmer's use will be substituted. Hence the problem now primarily concerns itself with frost prevention where intensive agriculture is practiced.

Dr. T. Wayland Vaughan of the U. S. Geological Survey has completed the following three papers which have just been transmitted for publication by the Carnegie Institution as parts of its *Publication No. 213:* "Some Shoal-Water Corals from Murray Island, Australia, Cocos-Keeling Islands, and Fanning Island"; "Some Shoal-Water Marine Bottom Samples from Murray Island, Australia, and Comparisons of Them with Samples from Florida and the Bahamas" (in collaboration with Joseph A.

Cushman, Marcus Isaac Goldman, Marshall A. Howe, and others); ''Temperature of the Florida Coral Reef Tract.'' Doctor Vaughan has also just finished two other papers which are of interest from the standpoint of zoögeographic distribution: ''Some Corals from the Kermadec Islands,'' to be published in New Zealand, and ''The Reef-Coral Fauna of Carrizo Creek, San Diego County, California.'' The last-mentioned paper is of special interest as in it he shows that in probably Pliocene time the Atlantic coral fauna extended into the head of the Gulf of California, but that no trace of any coral fauna of the Atlantic facies of a more recent age than Pliocene has yet been found on the Pacific side of the continent. It is known that the Oligocene coral faunas of the West Indies and the southern United States contain numerous corals of Pacific facies, but these no longer exist in the Atlantic Ocean.

PROFESSOR ROBERT DEC. WARD of Harvard University plans to spend the summer at Chocorua, N. H., engaged in work on his ''Climatology of the United States.''

MR. RAPHAEL ZON, Chief of Forest Investigations of the U. S. Forest Service, is planning to complete this summer the phytogeographic map of the United States on which he has been engaged in collaboration with Dr. H. L. Shantz. In addition, he will be engaged in field work in the Priest River (Idaho), Wind River (Oregon), and Feather River (California) forest reserves and the chaparral regions of southern California. This work will include the study of forest types in relation to climate and soil moisture and soil temperature.